



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,521	12/21/2001	Christopher F. Bevis	22120-06499	5910

758 7590 12/23/2003

FENWICK & WEST LLP  
SILICON VALLEY CENTER  
801 CALIFORNIA STREET  
MOUNTAIN VIEW, CA 94041

EXAMINER

DO, THUAN V

ART UNIT	PAPER NUMBER
----------	--------------

2825

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/029,521

Applicant(s)

BEVIS, CHRISTOPHER F.

Examiner

Thuan Do

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This final office action is responsive to the supplemental amendment received on 11/04/2003. Claims 1-23 are pending in this office action.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 103 that form the basis for the rejections under this section made in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasan, Pub. No. 2002/0165636 in view of Maayah et al. Pub. No. 2003/0076989.

**Regarding claim 1:** Hasan teaches a method comprising:  
accessing mask set data (Page 1, paragraph 0004 );  
recognizing a target structure in the mask set data (Page 4, paragraph 0035 where Hasan teaches a setup target information) ; and  
configuring the recipe parameters responsive to the recognized target structure (Page 4, paragraph 0035 where Hasan teaches a setup target system using "recipes, for use measuring process parameters").

Hasan does not teach without use of an exemplar of the mask set data. **Maayah** teaches this feature in paragraph [0021] where the data of non-repetitive regions can be used instead of an exemplar of the mask set data in repetitive regions.

It would have been obvious to one of ordinary skill in the integrated circuit design art at the time of the invention to have combined the teaching of **Maayah** into Hasan to have without use of an exemplar of the mask set data because using the non-repetitive regions can save time in inspecting semiconductor of production process.

Art Unit: 2825

**Regarding claim 2:** Hasan teaches a method with a process layer (Page 1, paragraph 0006).

**Regarding claim 3:** Hasan teaches a method with (Page 4, paragraph 0035).

**Regarding claim 4:** Hasan teaches a method with overlay target (Page 1, paragraph 0005).

**Regarding claim 5:** Hasan teaches a method comprising:  
receiving design data describing a die (Page 1, paragraph 0004 );  
extracting parameters from the design data relevant to the configuration of the instrument (Page 1, paragraph 0006 and page 4, paragraph 0035 Hasan teaches “extracting information about a structure” and “recipes, for use measuring process parameters” respectively. Examiner thinks that when using extracting a structure information and use measuring process parameters for measurement system that imply this claimed feature);

applying the extracted parameters to at least one die on the wafer (Page 1, paragraph 0006) ; and

creating the recipe from the applied extracted parameters, the recipe for performing the task (Page 4, paragraph 0035).

The added portion of “without use of an exemplar of the mask set data” is rejected in the same manner as in claim 1 rejection.

**Regarding claim 6:** Hasan teaches a method with inspection and metrology (Page 1, paragraph 0003).

**Regarding claim 7:** Hasan teaches a method with a stepper setup file (Page 1, paragraph 0005).

**Regarding claim 8:** Hasan teaches a method with element names and instance types (Page 1, paragraph 0005 using adjustment process).

**Regarding claim 9:** Hasan teaches a method with inspecting the wafer (Page 1, paragraph 0005 using microscopes).

**Regarding claim 10:** Hasan teaches a method with micro inspection (Page 1, paragraph 0005 using microscopes).

**Regarding claim 11:** Hasan teaches a method with macro inspection (Page 1, paragraph 0008 by using “examining a database of calculated signatures or model” for macro inspection).

**Regarding claim 12:** Hasan teaches a method with darkfield inspection (Page 1, paragraph 0004 by using exposing sources).

**Regarding claim 13:** Hasan teaches a method with measuring the wafer (Page 1, paragraph 0005).

**Regarding claim 14:** Hasan teaches a method with film measurement (Page 1, paragraph 0005).

**Regarding claim 15:** Hasan teaches a method with critical dimension measurement (Page 9, paragraph 0068).

**Regarding claim 16:** Hasan teaches a method with overlay measurement (Page 1, paragraph 0005).

**Regarding claim 17:** Hasan teaches a system comprising:  
an access module to access the design data (Page 4, paragraph 0035);  
an analyzer to extract parameters from the design data (Page 4, paragraph 0038 ) ; and  
a configuration module to produce a recipe for controlling one of an inspection and a metrology instrument (Page 4, paragraph 0035).

The added portion of “without use of an exemplar of the mask set data” is rejected in the same manner as in claim 1 rejection.

**Regarding claim 18:** Hasan teaches a system with network interface (Page 4, paragraph 0040 Hasan uses a network interface ).

**Regarding claim 19:** Hasan teaches a system with overlay recipe extraction (Page 1, paragraph 0005 and page 4, paragraph 0038).

**Regarding claim 20:** Hasan teaches a system with inspection recipe extraction (Page 4, paragraph 0038 ).

**Regarding claims 21,22:** Hasan teaches a system with the recipe (Page 4, paragraph 0035).

**Regarding claim 23:** Hasan teaches an instrument comprising:

an input interface for accessing the design data (Page 4, paragraph 0040 Hasan uses a network interface );

an analyzer to recognize target structures in the design data (Page 4, paragraph 0038 using analyzed parameters of model target structures); and

a recipe module creating a recipe in accordance with the recognized target structures (Page 4, paragraph 0035).

The added portion of "without use of an exemplar of the mask set data" is rejected in the same manner as in claim 1 rejection.

### ***Response to Arguments***

3. Applicant's arguments have been considered but are not persuaded according to the following issues:

Applicant said that the prior art does not disclose before an exemplar of the mask set data is created.

Search found **Maayah** teaching this feature as described in the above section.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2825

### CONTACT INFORMATION

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan Do whose telephone number is 703-305-2362. The examiner can normally be reached on Monday-Friday 8:30-5:30 (except 2nd Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 703-308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are 703305-3431 for regular communications and 703-305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0596.

Thuan Do  
Patent examiner  
12/19/03



VUTHE SIEK  
PRIMARY EXAMINER